

38. (Amended) A combination of a vehicle [including] and the arrangement of claim 10, the vehicle having a side door, at least a portion of the arrangement residing on the side of the vehicle.

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NOV 15 2000

REMARKS

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Entry of this amendment and reconsideration of the present application, as amended, are respectfully requested.

In this amendment, claims 37 and 38 have been amended to overcome a formal rejection. As such, it is respectfully submitted that this amendment should be entered as it reduces the number of outstanding rejections and does not raise any new issues.

Claims 1-40 are presently active in this application. Claims 37 and 38 are amended. Claims 4-6, 9, 13-15, 23, 26, 27, 31, 34 and 35 were deemed allowable.

Rejection of Claims 37 and 38 under 35 U.S.C. §112

Claims 37 and 38 have been amended to clarify the preamble of the claims so that the claims are now directed to a combination of a vehicle and the arrangement of claim 1 or claim 10, respectively. No new issues are raised by the changes to claims 37 and 38.

In view of the changes to claims 37 and 38, it is respectfully submitted that the Examiner's rejection thereof under 35 U.S.C. §112, second paragraph, has been overcome and should be removed.

Rejections on the Merits

Claims 1-3, 7, 8, 10-12, 16-19 and 36-40

Claims 1-3, 7, 8, 10-12, 16-19 and 36-40 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kaji et al. in view of White et al. The Examiner took the position that it would have been obvious to modify a vehicle having the arrangement of Kaji et al. to include means for determining the position of at least a part of the occupant and a control circuit coupled to the determining means for controlling deployment of the airbag.

The basis of a rejection under 35 U.S.C. §103(a) is that it would have been obvious to one skilled in the art at the time the invention was made to combine one reference (or a specific feature in that

reference) with another reference and arrive at the applicant's invention. In rejecting claims under 35 U.S.C. §103, the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443,1445, 24 USPQ2d 1443,1444 (Fed. Cir. 1995). A *prima facie* case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art, *In re Rickaert*, 9 F.3d 1531 (Fed. Cir. 1993). It is well-settled that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, "absent some teaching or suggestion supporting the combination." *In re Bell*, 26 USPQ2d 1529,1531 (Fed. Cir. 1993); *In re Fine*, 837 F.2d at 1075, 5 USPQ2d at 1598; *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572,1577, 221 USPQ 929,933 (Fed. Cir. 1984). The teachings of the references can be combined only if there is some suggestion or incentive to do so. *Id.*

The Examiner's rejection is respectfully traversed on the grounds that there is no teaching or suggestion provided by either Kaji et al. or White et al. supporting the proposed combination of references and therefore the combination can only be made with the use of hindsight reconstruction, which is impermissible.

Kaji et al.

Kaji et al. show an airbag restraint system including a side airbag, i.e., an airbag disposed at each of the doors. An acceleration sensor is disposed at each lateral side of the vehicle to detect a directional impact and when the vehicle is crashed at one lateral side, the airbag at the impacted side is inflated, along with a center airbag. Thus, Kaji et al. uses an acceleration sensor to determine when the crash into the lateral side of the vehicle is of such a magnitude to require deployment of the lateral side airbag.

A stated objective of Kaji et al. is to prevent vehicle passengers who are seated side by side from impacting with each other in the event of a side direction vehicle crash (Col. 1, lines 42-46). This objective is realized by the provision of the center airbag which is interposed between the passengers during a crash and thereby prevents the passengers from contacting one another.

Kaji et al. does not teach or suggesting deploying the side airbag based on the position of the occupant. Thus, one problem the airbag system of Kaji et al. will have is that if the occupant is out-of-position for deployment of the side airbag, e.g., leaning on the side door, the airbag will nevertheless deploy (upon the acceleration sensors detecting the vehicle collision at the sides of the vehicle) and potentially cause greater harm to the occupant than if the airbag had not deployed.

White et al.

White et al. shows an apparatus for actuating a passenger safety restraint such as a steering wheel-mounted airbag 16 in which an ultrasonic sensor 26 senses the position assumed by the passenger relative to various fixed interior structures of the vehicle, such as the vehicle's steering wheel 18, dashboard 28 and knee bolsters 30 (col. 4, lines 42-46). A control module 36 calculates the likely effectiveness of deployment of the air bag 16 mounted on the steering wheel 18 in preventing contact between the passenger and the fixed interior structures given the sensed position of the passenger as determined by the ultrasonic sensor 26 and if this falls below a threshold value, control module 36 illuminates a signal lamp 38.

Argument

At the time the invention was made, one skilled in the art would not have considered controlling deployment of a side airbag based on the position of the occupant or a part thereof. Side airbags and steering-wheel mounted or frontal airbags are quite different in nature and it would not have been obvious to one skilled in the art to control deployment of a side airbag based on the position of the occupant in light of the disclosure in White et al. to control deployment of a frontal airbag based on the position of the occupant relative to fixed interior structures.

According to White et al., the position of the passenger before operation of the occupant restraint is critical in determining the rate at which the passenger must be decelerated relative to the fixed interior structures by the occupant restraint in order to prevent injurious contact therewith (col. 1, lines 47-53). There is thus a problem when the passenger is decelerated at a lower rate than required based on his or her position relative to the fixed interior structures because the passenger will then strike the fixed interior structures and suffer an injury (see col. 1, lines 53-62).

However, the main problem arising from use of a side airbag is not related to optimizing the deceleration of the passenger to prevent contact between the passenger and fixed interior structures. Rather, as set forth at page 2, lines 27-29 of the application, the most significant problem associated with deployment of a side airbag is when a child or other person is leaning against the deployment door of the airbag. In this case, the deployment of the airbag at a high velocity will exert a large force against the child, very likely causing significant injury. The overriding concern for control of a side airbag is thus not to decelerate the child at the optimum

deceleration rate to prevent contact with fixed interior structures but rather to prevent deployment is the child is leaning against the deployment door.

In view of the differences between the main objectives of a position determining system for use with a frontal airbag and a side airbag, and the fact that White et al. is intended to solve a particular problem arising primarily with the frontal airbag, one skilled in the art would not be motivated to apply the disclosure in White et al. of controlling deployment of a frontal airbag based on the position of the occupant for a side airbag as suggested by the Examiner.

In the absence of such motivation, as well as the absence of any suggestion in White et al. to apply the system described therein for use with a side airbag, it would not have been obvious at the time the invention was made to modify a vehicle having an arrangement of Kaji et al. to include determining means for determining the position of at least a part of an occupant and a control circuit for controlling deployment of a side airbag based on the determined position of the at least a part of the occupant as set forth in independent claim 1. Similarly, it would not have been obvious at the time the invention was made to modify a vehicle having an arrangement of Kaji et al. to include cooperating components arranged to provide a signal indicative of the position of at least a part of an occupant and a control circuit for controlling deployment of a side airbag based on the position of the at least a part of the occupant as set forth in independent claim 39.

With respect to independent claims 10 and 40, White et al. does not teach or suggest using a wave-receiving receiver or at least two cooperating components to determine whether an occupant is present in the seat. Rather, White et al. mentions a pyrotechnic sensor 24 for sensing the presence of a passenger.

Kaji et al. also does not disclose the features of claims 10 and 40.

In view of the absence of the features of claims 10 and 40 in Kaji et al. and White et al., one could not combine these references and arrive at the invention of independent claims 10 and 40, and claims 11, 12 and 16-19 which depend from claim 10.

With respect to claims 7, 16, 37 and 38, it is respectfully submitted that it would not have been an obvious matter of design choice to mount a receiver in a door of the vehicle. The ultrasonic sensor 26 in White et al. is arranged in front of the passengers and thus provides an indication of the distance between the passenger and the fixed interior structures in front of the

passenger. If the receiver was placed in the door of the vehicle, it could not reliably provide an indication of the distance between the passenger and the fixed interior structures in front of the passenger and thus would not enable the system of White et al. to accomplish its intended objective.

As such, placement of the receiver of White et al. in a door of the vehicle would not only not be a matter of design choice but would not be an obvious modification to one of ordinary skill in the art.

In view of the arguments presented above, it is respectfully submitted that the Examiner's rejection of claims 1-3, 7, 8, 10-12, 16-19 and 36-40 has been overcome and should be removed.

Claims 20-22, 24, 25, 28-30, 32 and 33

Claims 20-22, 24, 25, 28-30, 32 and 33 were rejected under 35 U.S.C. §102(b) as being anticipated by Kaji et al. or, in the alternative, under 35 U.S.C. §103(a) as being obvious over White et al.

First, the Examiner took the position that Kaji et al. anticipates the claimed method because the device of Kaji et al. would necessarily perform the claimed method in its normal and usual operation.

The Examiner's rejection is respectfully traversed.

Deployment of the airbags in Kaji et al. is initiated by the detection of a vehicle collision by the acceleration sensors 30FR and 30FL.

Kaji et al. does not mention anywhere or provide any component to determine the position of at least a part of the occupant and then control deployment based thereon as set forth in independent claim 20. For example, deployment of the airbag in Kaji et al. does not entail receiving waves from a space above a seat portion of the seat and generating a signal representative of the position of the at least a part of the occupant based on the received waves as set forth in claim 21, possibly by means of a transducer as set forth in claims 24 and 25.

Kaji et al. also does not mention determining the presence of an occupant in order to control deployment of a side airbag, i.e., allow or suppress deployment, as set forth in claim 28. At the time the invention was made, airbags were typically set to deploy without regard to the presence of an occupant, i.e., presence sensors were not incorporated into airbag control mechanisms when first introduced into vehicles. Thus, in the absence of a passenger, the

passenger-side airbag would nevertheless deploy in a crash and airbags would also deploy in parked cars if the parked vehicle were struck with sufficient force to meet the criteria for airbag deployment. Moreover, it is not inherent to receive waves from a space above a seat in order to determine the presence of an occupant as set forth in claim 29, possibly by using a transducer as set forth in claims 32 and 33.

Second, the Examiner took the position that White et al. discloses all the structure necessary to perform the claimed functions.

This position is also respectfully traversed.

White et al. does not disclose a side airbag which is an essential part of the structure of the embodiments of the invention set forth in claims 20-22, 24, 25, 28-30, 32 and 33. Rather, White et al. shows an airbag mounted in the steering wheel which is different than a side airbag.

Modification of the system of White et al. for use with a side airbag would fundamentally alter the essence of the White et al. invention and therefore would not be obvious to one skilled in the art. As noted above, White et al. is designed to enable a determination of the position of the passenger relative to fixed interior structures in the same orientation as the airbag, i.e., in front of the passenger, as to enable the deceleration rate of the passenger relative to the fixed interior structures to be optimized. By contrast, the detection of the position of a passenger for use with a side airbag is primarily for the purpose of preventing deployment of the airbag when an occupant is leaning against the deployment door of the airbag.

In view of the arguments above, it is respectfully submitted that the Examiner's rejection of claim 20-22, 24, 25, 28-30, 32 and 33 under 35 U.S.C. §102(b) as being anticipated by Kaji et al. or, in the alternative, under 35 U.S.C. §103(a) as being obvious over White et al. have been overcome and should be removed.

Other

With respect to the "special" status of the application, this Amendment is being promptly submitted and it is believed that all of the points raised by the Examiner in the Action have been addressed above and therefore the application should now be in condition for allowance. As such, it is not believed that it is necessary to conduct an interview to place the application in condition for allowance.

An early and favorable action on the merits is earnestly solicited.

FOR THE APPLICANTS

Respectfully submitted,



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